YANG Data Model for Configuration Scheduling
draft-liu-netmod-yang-schedule-03

Github: https://github.com/ietf-mpls-yang/te/blob/master/ietf-schedule.yang

Xufeng Liu (Ericsson)

Vishnu Pavan Beeram (Juniper Networks)

Igor Bryskin (Huawei Technologies)

Tarek Saad (Cisco)

Himanshu Shah (Ciena)

Oscar Gonzalez De Dios (Telefonica)

Introduction

- A YANG model to specify configuration scheduling.

- When schedules are specified on a data object, the object is configured or removed based on the schedules.

Applications

- TE topology model in TEAS working group

- Resource scheduling in PCE (Path Computation Element)

- I2RS controller

- DTN (Delay/Disruption Tolerant Networking)

- Operator expressed interest during IETF97

Changes

- Security aspects

- Datastore validation

- Schedule expansion and execution

- Interactions with locks

- Interactions with authorization mechanism

- Time synchronization aspects

Model Structure

```
module: ietf-schedule
   +--rw configuration-schedules
      +--rw target* [object]
         +--rw object         yang:xpath1.0
         +--rw operation?    operation
         +--rw data-value?   anydata
         +--rw schedules
         |   +--rw schedule* [schedule-id]
         |      +--rw schedule-id           uint32
         |      +--rw inclusive-exclusive?  enumeration
         |      +--rw start?                yang:date-and-time
         |      +--rw schedule-duration?    string
         |      +--rw repeat-interval?      string
         +--ro state
         |   +--ro future-executions
         |      +--ro execution* [start]
         |         +--ro start       yang:date-and-time
         |         +--ro duration?   string
         |         +--ro operation?  operation
         +---n execution
            +---- operation    operation
            +---- datetime?    yang:date-and-time
            +---- results?     anydata
```

Usage Example 1

```
 module: example
      +--rw te-links
         +--rw te-link* [id]
            +--rw id        string
            +--rw enabled?   boolean

<configuration-schedules>
  <target xmlns:ex="urn:example">
    <object>/ex:te-links</object>
    <operation>configure</operation>
    <data-value>
      <te-link>
      <id>link-1</id>
      <enabled>true</enabled>
      </te-link>
    </data-value>
    <schedules>
      <schedule>01
        <schedule-id>11<schedule-id>
        <start>2016-09-12T23:20:50.52Z</start>
        <schedule-duration>P1D</schedule-duration>
        <repeat-interval>R5/P1W</repeat-interval>
      </schedule>
    </schedules>
  </target>
</configuration-schedules>
```

link-1 is configured weekly for 5 1-day periods, starting from 2016-09-12T23:20:50.52Z.

Usage Example 2

```
 module: example
      +--rw te-links
         +--rw te-link* [id]
            +--rw id         string
            +--rw enabled?   boolean

<configuration-schedules>
  <target xmlns:ex="urn:example">
    <object>
       /ex:te-links/ex:te-link[ex:link-id='link-1']/ex:enabled
    </object>
    <operation>set</operation>
    <data-value>true</data-value>
    <schedules>
      <schedule>
        <schedule-id>11<schedule-id>
        <start>2016-09-12T23:20:50.52Z</start>
        <schedule-duration>P1D</schedule-duration>
        <repeat-interval>R5/P1W</repeat-interval>
      </schedule>
    </schedules>
  </target>
</configuration-schedules>
```

link-1 is enabled weekly for 5 1-day periods, starting from 2016-09-12T23:20:50.52Z.

Next Steps

- Solicit comments

- WG consensus